CLAIMS

1. A programmable control arrangement for a self-propelled floor care appliance, comprising:

   a self-propelled floor care appliance having a propulsion drive motor for propelling the floor care appliance over a surface to be cleaned;

   a hall effect sensor positioned in an operative relationship with a handle located on the distal end of an upper housing of said floor care appliance to sense the desired direction and speed of the floor care appliance from the user and provide a corresponding output;

   a programmable microprocessor to receive the output from the device for outputting a signal according to pre-programmed logic; and

   a controller for receiving the signal and providing a voltage to a propulsion drive motor at a corresponding voltage and polarity.

2. The programmable control arrangement for a self-propelled floor care appliance of claim 1, wherein said hall effect sensor outputs a voltage of varying magnitude based upon the position of the hall effect sensor relative to a magnet embedded in the floor care appliance handle.

3. The programmable control arrangement for a self-propelled floor care appliance of claim 2, wherein said floor care appliance handle is pushed and pulled by the user to cause the magnet embedded in said handle to move relative to said hall effect sensor to cause to said propulsion motor to propel said floor care appliance in the forward and reverse directions.

4. The programmable control arrangement for a self-propelled floor care appliance of claim 1, wherein said programmable microprocessor is pre-programmed to pulse width modulate the voltage applied to the propulsion drive motor based upon the position of said handle such that the response of the propulsion drive motor is follows a pre-determined characteristic.

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5.   The programmable control arrangement for a self-propelled floor care appliance of claim 4, wherein said pre-determined characteristic is a based upon a mathematical algorithm.

6.   The programmable control arrangement for a self-propelled floor care appliance of claim 5, wherein said pre-determined characteristic is a based upon a table of values.

7.   A programmable control arrangement for a self-propelled floor care appliance, comprising:

        a handle at the distal end of the upper portion of the floor care appliance capable of translating from a neutral position to a forward and reverse position by a user applying a pushing or pulling movement of a varying magnitude amount on the handle;

        a propulsion drive motor for propelling said floor care appliance over a surface to be cleaned;

        a magnet located adjacent to the handle;

        a hall effect sensor mounted in the handle and positioned in an operative relationship with the magnet, said hall effect sensor generating a voltage of varying magnitude according to the relative position of the hall effect sensor to the magnet as the handle is moved from the neutral position to the forward and reverse positions;

        a programmable microprocessor for receiving the varying voltage from said hall effect sensor for outputting a signal according to pre-programmed logic based upon the magnitude of said voltage; and

        an H-bridge controller for controlling the flow of current and voltage applied to said propulsion drive motor based upon said signal from said microprocessor.

8.   The programmable control arrangement for a self-propelled floor care appliance of claim 7, wherein said programmable microprocessor is pre-programmed to pulse width modulate the voltage applied to the propulsion drive motor by said H-

bridge based upon the movement of said handle such that the response of the propulsion drive motor is based upon a mathematical algorithm.

9. The programmable control arrangement for a self-propelled floor care appliance of claim 10, wherein said programmable microprocessor is pre-programmed to pulse width modulate the voltage applied to the propulsion drive motor by said H-bridge based upon the movement of said handle such that the response of the propulsion drive motor is a based upon a table of values.

10. A programmable control arrangement for a self-propelled floor care appliance, comprising:

a self-propelled floor care appliance having a propulsion drive motor for propelling the floor care appliance over a surface to be cleaned;

a hall effect sensor positioned in an operative relationship with a wheel located on a main body of said floor care appliance to sense the desired direction and speed of the floor care appliance and provide a corresponding output;

a programmable microprocessor to receive the output from the hall effect sensor for outputting a signal according to pre-programmed logic; and

a controller for receiving the signal and providing a voltage to a propulsion drive motor at a corresponding voltage and polarity.

11. The programmable control arrangement for a self-propelled floor care appliance of claim 10, wherein said hall effect sensor outputs a voltage of varying value based upon the rotation of a series of magnets positioned circumferentially on said wheel past said hall effect sensor.

12. The programmable control arrangement for a self-propelled floor care appliance of claim 10 wherein said wheel is rotated when a user either pushes or pulls on a handle located on the distal end of said floor care appliance.

13. The programmable control arrangement for a self-propelled floor care appliance of claim 11, wherein said programmable microprocessor is pre-programmed to pulse width modulate the voltage applied to the propulsion drive motor based upon the speed said magnets are rotated past said hall effect sensor such that the response of the propulsion drive motor follows a pre-determined characteristic.

14. The programmable control arrangement for a self-propelled floor care appliance of claim 13, wherein said pre-determined characteristic is a based upon a mathematical expression.

15. The programmable control arrangement for a self-propelled floor care appliance of claim 13, wherein said pre-determined characteristic is a based upon a table of values.